UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 8, MONTANA OFFICE
FEDERAL BUILDING, 10 West 15th St, Suite 3200
HELENA, MONTANA 59626

Ref: 8MO

April 20, 2011

Ms. Tami Paulsen
Missoula District Ranger
Fort Missoula, Building 24,
Missoula, Montana 59804

Re: CEQ 20110069; EPA comments on Montana Snowbowl Expansion DEIS

Dear Ms. Paulsen:

The Environmental Protection Agency (EPA) Region VIII Montana Office has reviewed the Draft Environmental Impact Statement (DEIS) for the Lolo National Forest's Montana Snowbowl Expansion Project in accordance with EPA responsibilities under the National Environmental Policy Act (NEPA) and Section 309 of the Clean Air Act. Section 309 of the Clean Air Act directs EPA to review and comment in writing on the environmental impacts of any major Federal agency action. EPA's comments include a rating of both the environmental impact of the proposed action and the adequacy of the NEPA document.

The Lolo National Forest (LNF) proposes to approve a Special Use Permit (SUP) for the expansion of the Montana Snowbowl Ski and Summer Resort (MSB) to TV Mountain, increasing the SUP area by 1,105 acres to 2,243 acres. Proposed new facilities on LNF land would include 28 new ski trails on 166 additional acres, 4 additional lifts, an additional snowmaking reservoir, two wastewater drainfields, a day lodge, skier shelter and maintenance shop, buried utility lines (power, water, and wastewater), and hiking and mountain bike trails. Development activities would involve cutting trees on 182 acres. The Proposed Action includes an amendment to the Forest Plan that would change approximately 706 acres from MA 16 (timber production) and 399 acres from MA 25 (timber production) to MA 8 (ski areas)

The EPA's most significant environmental concern regarding the proposed MSB expansion DEIS involves increased adverse dewatering effects to Butler Creek fish and aquatic life and crucial over-wintering fisheries habitat that would result from diversion of an additional 20 acre-feet water from Butler Creek during the mid-October to end of March period. It is our understanding that MSB's proposed ski area expansion would increase the total water withdrawals from Butler Creek from 28 acre-feet to 48 acre-feet per year, with the additional water withdrawal needed for both snowmaking (15 acre-feet) and fire protection (5 acre-feet). This will be achieved by withdrawing water at the same rate that is currently used (115 gpm), but extending the period of withdrawal of water from Butler Creek from 55 maximum days per year to 94 days per year (increase of 39 days).

The DEIS indicates that the existing MSB water diversion of 28 acre-feet during the mid October to end of March period for snowmaking and water supply is already negatively affecting over-wintering habitat in section 1 of Butler Creek, and the upper portion of section 2. The DEIS also states that at the local level (Butler Creek, La Valle Creek, and Grant Creek), extinction risks are "extreme" for bull trout (a threatened species) and "high" for westslope cutthroat trout. The reasons given include water withdrawal in Butler Creek and local stream habitat conditions. Population/habitat conditions for bull trout are stated to be already functioning at unacceptable risk for all indicators on Butler Creek. Accordingly we are concerned that diversion of an additional 20 acre-feet over an additional 39 days during the over-wintering period is likely to further aggravate dewatering effects to fish and aquatic life and crucial over-wintering habitat. The DEIS states that extending MSB's water withdrawal to mid October would extend Butler Creek's low flow conditions, and could potentially dewater riffle habitats in Section 1 as early as mid October, and could impact westslope cutthroat trout over-wintering habitat.

The DEIS indicates that MSB would construct a flow monitoring station on Butler Creek to monitor and report flow rates during the winter season, and that the LNF will confirm that flows are protective of aquatic organisms during crucial over-wintering conditions by verifying that minimum flows of 30 gpm will be maintained in Butler Creek for fish habitat. While we are pleased that monitoring of low flows in Butler Creek is proposed, it is not clear to us how flows protective of aquatic life and crucial over-wintering habitat can be consistently provided, since existing water withdrawals are already resulting in adverse effects to Butler Creek aquatic life and over-wintering habitat, and an additional 39 days of water withdrawals at 115 gpm are proposed that will result in loss of an additional 20 acre-feet of streamflow during this winter period. We note that in addition to the 48 acre-feet of water withdrawn from Butler Creek by the MSB, the DEIS states that 17 acre-feet of water are also withdrawn by downstream users from October to March, and it is estimated that the watershed only produces 74 acre-feet of water during this period. This leaves only 9 acre-feet in Butler Creek to support fish and aquatic life during the crucial over-wintering period.

Table 3-11 in the DEIS reports Butler Creek flows on various days in 2008, but only includes two days reporting flows during the mid-October to end of March period (i.e., flows of 0.07 cfs or 31 gpm on October 30; and 0.04 cfs or18 gpm on November 6 in section 1). No flows are reported for section 2 or section 3 of Butler Creek, and no other flows are reported during the mid-October to end of March period (i.e., December, January, February, or March). If a minimum flow of 30 gpm (0.067 cfs) in Butler Creek is needed to maintain fish habitat, it appears that such minimum flows may already be threatened, since the only two reported flows during the October to March period are only 31 gpm and 18 gpm in section 1. We also note that the DEIS states that at the existing MSB diversion Butler Creek flows vary from 80 gpm to 116 gpm during the mid-October to end of March period (which seems inconsistent with the Butler Creek flows reported in Table 3-11). It is not clear to us how 115 gpm will be withdrawn from Butler Creek over an additional 39 days during the winter without additional adverse dewatering effects to crucial over-wintering fisheries habitat.

The DEIS states that Butler Creek gains volume as it flows downstream so that dewatering effects diminish downstream, ending before known bull trout locations, but westslope cutthroat trout occupying the upstream dewatered sections of the creek would be affected. The Butler Creek locations on which the existing and proposed MSB diversions take place in relation to important fisheries and fisheries habitat are not clearly presented. We recommend that the FEIS include a map showing Butler Creek sections 1, 2, and 3 and locations of crucial over-wintering pools in relation to MSB water diversion locations.

We also recommend that the FEIS include additional discussion regarding how the LNF will be able to confirm that adequate Butler Creek in-stream flows can be consistently maintained that are protective of aquatic life and crucial over-wintering habitat. We believe efforts should be made to mitigate worsening of the already extreme risks of extinction of bull trout and high risk of extinction of westslope cutthroat trout at the local level. We recommend evaluation and discussion regarding the potential for pumping water from other water sources for snowmaking to avoid additional adverse effects to fish and aquatic life and over-wintering and riffle habitats in Butler Creek.

The DEIS also does not discuss the potential effect of climate change on the proposed ski area expansion project. Most climate change models predict warmer winters and more of the region's precipitation coming in the form of rain than as snow, overall less snowpack, and more rapid melting of snowpack in the Rocky Mountain West. This has potential to affect existing and expanded snowmaking infrastructure at ski areas, including MSB, and possibly exacerbate stream dewatering concerns. We recommend that the FEIS discuss climate change and its potential effects on ski area operations, and analyze and disclose potential climate change adaptation or contingency measures, particularly in regard to snowmaking and effects on surface water diversions and maintaining adequate in-stream flows to support fisheries.

We also have concerns about potential indirect, growth inducing effects of the proposed MSB expansion upon environmentally sensitive areas. Ski area expansions can promote and hasten additional growth and development to serve the increased numbers of skiers and service workers. Additional visiting skiers require transportation, improved road access, increased wastewater treatment, water supply, restaurants, hotels, service workers, and places for those service workers to live. Often the indirect, growth inducing impacts of ski area expansions, and the infrastructure, growth and development sprouting nearby to serve the ski area causes greater environmental impacts or concerns than the direct impacts of the ski area expansion itself. The DEIS includes minimal discussion or disclosure of potential indirect, growth inducing and land use changing effects of the proposed MSB expansion.

We recommend that the FEIS identify and discuss potential indirect effects or induced growth or development changes that may be associated with the ski area expansion (and potential doubling of skier capacity), or at least make a good faith effort to explain the effects that are "reasonably foreseeable" (40 CFR 1508.8(b)). How much developable private land lies within easy commuting distance of the MSB? Are there environmentally sensitive areas such as riparian areas, wetlands or other important wildlife habitat (e.g., old growth) within reasonable proximity to MSB that may be developed as an indirect response to MSB expansion and

increased skier use? Will induced growth and land use change have an effect on air, water, and other natural systems and/or environmentally sensitive areas near the ski area?

We recognize that future land uses and potential growth near the ski area may not be precisely known, but it may be possible to consider likely land uses and development trends in the area and estimate and disclose the likelihood that undeveloped land near the ski area will be developed as an indirect result of the ski area expansion. Also, the consistency of the proposed MSB expansion with Missoula County Land Use Plans should be disclosed in the FEIS.

A significant amount of construction and grading would be required for the new ski trails, new snowmaking reservoir, additional ski lifts, new buildings, utility lines, wastewater drainfields, and other construction activities. We are pleased that many hydrology and fishery mitigation measures were identified in the DEIS to minimize soil erosion and sediment transport during construction and grading activities. The DEIS states that no sediment delivery to streams would occur, since none of the proposed areas to be graded are located on or immediately adjacent to a stream, wetland, or other waters of the U.S., and a stormwater permit and erosion control plan would be obtained. It will be important that adequate sediment and erosion control BMPs are used during all construction and grading activities; disturbed areas are promptly revegetated; and that effectiveness of BMPs and revegetation are monitored and verified.

The EPA's further discussion and more detailed questions, comments, and/or concerns regarding the analysis, documentation, or potential environmental impacts of the Montana Snowbowl Expansion DEIS are included in the enclosure with this letter. Based on the procedures EPA uses to evaluate the adequacy of the information and the potential environmental impacts of the proposed action and alternatives in an EIS, the DEIS has been rated as Category EC-2 (Environmental Concerns - Insufficient Information) due to concerns regarding potential effects to fisheries and aquatic life from increased dewatering of Butler Creek, and insufficient evaluation and disclosure of potential indirect, growth inducing effects of ski area expansion on nearby environmentally sensitive areas. We recommend additional analysis and information to fully assess and mitigate all potential impacts of the management actions. A copy of EPA's rating criteria is attached.

The EPA appreciates the opportunity to review and comment on the DEIS. If we may provide further explanation of our comments please contact Mr. Steve Potts of my staff in Missoula at 406-329-3313 or in Helena at 406-457-5022 or via e-mail at potts.stephen@epa.gov. Thank you for your consideration.

Sincerely,

Julie A. DalSoglio
Director
Montana Office

Enclosures

cc: Larry Svoboda/Connie Collins, EPA 8EPR-N, Denver
Dean Yashan/Robert Ray/Mark Kelley, MDEQ, Helena
Mark Wilson, USFWS, Helena

EPA Comments on Montana Snowbowl Expansion Draft Environmental Impact Statement (DEIS)

Brief Overview of Proposed Project:

The DEIS evaluates the proposed expansion of the Montana Snowbowl Ski and Summer Resort (MSB), which is an alpine ski and summer resort located approximately 12 miles north of Missoula, Montana. MSB is located in the Butler and LaValle Creek watersheds on both private land and Lolo National Forest (LNF) land. The purpose and need for this expansion is based on the goal of the Forest Plan to provide recreation opportunities including developed and year-round recreation providing: additional ski terrain, including additional beginner and intermediate ski terrain, and enhancing summer use and balancing summer and winter use (e.g., hiking, mountain biking, folf, skiing, snowboarding).

MSB has operated under a LNF Special Use Permit (SUP) since 1961. All of the existing SUP area on LNF land was assigned to MA 8 (ski areas) in the 1986 LNF Land and Resource Management Plan. A previous expansion to the current 1,138 acres including addition of several lifts, ski trails, a hiking/biking trail, and expanded snowmaking was approved in 1996. However, MSB delayed or modified some of the remaining projects approved in that decision based on economic considerations and the requirement by the LNF to complete improvements to Snowbowl Road/Forest Road (FR) 698. Previously approved improvements in the 1996 decision would be delayed pending the approval of this proposed expansion. Those previously approved activities are part of the Proposed Action and are therefore analyzed in this EIS. The current SUP expires in 2044.

The DEIS evaluates two alternatives, the No Action alternative and the Proposed Action. An additional three additional alternatives were considered but were eliminated from further study. Alternative A is the no action alternative involving maintenance of the existing conditions at MSB and LNF land. MSB improvements approved by the LNF in 1996, but not yet constructed, could be made after Snowbowl Road is improved. The current SUP allows MSB to operate on 1,138 acres of LNF land. The LNF would not need to make any changes to the current Management Area (MA) designations.

Alternative B is the proposed action and includes the set of actions previously approved in 1996, which were not built with slight modifications. The proposed expansion would increase the existing SUP area by 1,105 acres to 2,243 acres. New facilities on LNF land would include 28 additional ski trails comprising166 additional acres, 4 additional lifts, buried lines (power, water, and wastewater), a snowmaking reservoir, hiking and mountain bike trails, two wastewater drainfields, one new snowmaking storage reservoir, an additional day lodge, skier shelter and maintenance shop, and would involve cutting trees on 182 acres. Proposed Action includes an amendment to the Forest Plan that would change approximately 706 acres from MA 16 (timber production) and 399 acres from MA 25 (timber production) to MA 8 (ski areas). Alternative B is the Agency's preferred alternative.

Comments:

1. We appreciate the inclusion of clear narrative discussions describing alternatives in the DEIS, including discussion of project history, existing conditions and proposed features of the ski area expansion (i.e., lifts, ski trails, timber harvest, grading, buildings, roads, parking, water and wastewater systems, energy supply), mitigation measures and monitoring, as well as Table 2-2 comparing alternatives, Table 2-3 describing environmental effects of alternatives, and Table 2-4 summarizing permits and regulatory requirements. We also appreciate inclusion of the figures and maps showing locations of project features. The DEIS narrative, tables and maps facilitate improved project understanding, help define issues, and assist in evaluation of alternatives providing a clearer basis of choice among options for the decisionmaker and the public in accordance with the goals of NEPA.

Water Quality

2. The proposed action, in conjunction with connected actions, would remove trees from 182 acres, and soil erosion would occur during tree removal as well as during construction of ski trails, ski lifts, wastewater drainfields, a snowmaking reservoir, and buildings. We are pleased that the DEIS states that soil erosion would occur for only a short period of time and would be limited at sites scattered across TV Mountain (page 4-2). No areas of extended, continuous mineral soil exposure would result from timber harvest and slash disposal. It is stated that substantial soil disturbance would occur on approximately 39 total acres of ground due to grading necessary for ski trail smoothing, bike trails, and for infrastructure such as a new reservoir and new water and sewer lines, but this grading would occur in small scattered sites, most of which are less than 5 acres in size. The greatest potential for soil erosion would be at grading sites for construction of ski trail transitions and at snowmaking facilities and buildings.

   The DEIS states that bull trout (a threatened species) and westslope cutthroat trout are present in Butler Creek (page 4-37) and may be present in La Valle Creek (page 3-71), but the DEIS also states that no streams or other waters of the U.S. are present in the proposed expansion area with La Valle Creek being the closest water of the U.S. to the proposed expansion area, located approximately 150 feet downhill of the west boundary at its closest point. The only construction activity within 500 feet of a surface water would occur with the lower terminal for lift A, which would be built 150 feet from La Valle Creek, and where erosion control practices and revegetation of disturbed ground would be used to minimize sediment transport.

   We are pleased that the DEIS also states that none of the proposed areas to be graded are located on or immediately adjacent to a stream, wetland, or other waters of the U.S., and that a stormwater permit and erosion control plan would be obtained to minimize the area of disturbance. We also appreciate the many hydrology and fishery mitigation measures identified in the DEIS (e.g., sediment

fences, erosion fabric/mulch, water bars/dips/grade reversals, revegetate disturbed areas quickly using a mixture of native and desirable non-native plant species-primarily grasses, (pages 2-8, 2-15 to 2-17); and are pleased that no new roads or stream crossings area included in the proposed action (page 4-7). It is important that mitigation practices (BMPs) be implemented to minimize soil erosion during construction and grading activities, and that disturbed ground be revegetated, and monitoring to ensure mitigation effectiveness is carried out.

3. We are also pleased that MSB is regrading and resloping the parking lot so that parking lot runoff discharges away from Butler Creek where sediment would be filtered by existing native vegetation (pages 2-11, 4-3). In addition we appreciate the relocation of wastewater disposal drainfields further away from Butler Creek to reduce potential for contaminated groundwater to enter the creek (i.e., from 200 feet to more than 3,000 feet from Butler Creek, pages 2-12, 3-4).
   We recommend clear commitment to revegetate eroding areas at the lower lift terminal for the La Valle Creek chairlift adjacent to La Valle Creek which are discussed on page 3-5.

4. EPA considers the protection, improvement, and restoration of wetlands and riparian areas to be a high priority. Wetlands and riparian areas increase landscape and species diversity, and are critical to the protection of designated water uses. Executive Order 11990 requires that all Federal Agencies protect wetlands. We are pleased that the DEIS indicates that no wetlands were identified in the proposed expansion area (page 3-20), and that La Valle Creek is located west of the proposed SUP boundary and is separated along its length by a well vegetated buffer area. We do recommend that the ski resort operator be required to avoid plowing snow from roads and parking areas into streams, wetlands, and riparian areas.

5. The DEIS does not mention if the MSB currently uses, or intends to use chemicals to stabilize ski runs (e.g., ammonium nitrate or other salts). Chemicals are sometimes used for such purposes at ski areas. The FEIS should state whether MSB uses, or plans to use, chemicals on its ski trails. Any anticipated environmental effect of chemical usage such as impacts to surface or ground water quality, or wetlands should be analyzed and disclosed.

6. The DEIS states that the MSB stores diesel fuel for grooming equipment and generators in two double-walled aboveground storage tanks located in the existing SUP area. One 1,500-gallon tank is located adjacent to the Grizzly Chalet at the top of Grizzly chairlift. One 3,000-gallon tank is located south of the main parking lot. Both tanks are double-wall construction, and are located on LNF land (page 3-81).

   The storage of petroleum products including but not limited to gasoline, diesel fuel, hydraulic fluid, lubricating oil, and waste oil is regulated under Section 311 of the Clean Water Act, and as amended by the Oil Pollution Act of 1990. A Spill Prevention, Control, and Countermeasures Plan (SPCCP) is required of any

facility that at any one time stores over 660 gallons of petroleum product in a single container, or stores over 1,320 gallons in multiple containers. Wheeled containers are included for the purposes of this regulation. The SPCCP regulations are administered by EPA (contact Martha Wolf in Denver at 303-312-6839).

SPCCP plans, if required, should include consideration of the specific environmental conditions at the project site, which include steep slopes and rain and snow events, and should consider risks to drinking water sources downstream of the site, see http://www.epa.gov/oilspill/. Although we are not aware of any hazardous materials planned for storage or use at the ski area, should the Forest Service determine that hazardous materials will be used or stored at the site, they should contact the EPA representative at the above telephone number to determine appropriate spill prevention, control, and countermeasure.

Water Diversions for Snowmaking

7. The DEIS states that the existing water diversion is negatively affecting over-wintering habitat in Section 1 of Butler Creek, and the upper portion of Section 2 (page 3-69). We are concerned that adverse effects to fish and aquatic life and over-wintering habitat in Butler Creek from dewatering will be further aggravated by withdrawal of an additional 20 acre-feet of water during the mid-October to late March period with the proposed MSB expansion.

   In Chapter 3 it is stated that MSB owns three water rights for operation of the ski area: 1) Water Right 76M-C084571 for 7.95 acre feet from groundwater pumping at 20 gpm near the existing base area for commercial uses; 2) Water Right 76M-P089451 for a 20 acre-feet diversion via a catchment basin in a tributary of Butler Creek and pumping to a storage reservoir at 95 gpm for snowmaking uses; and 3) Water Right 76M-3004427 for an additional 20 acre-feet Butler Creek diversion for snowmaking in the proposed expansion area (page 3-15). The existing maximum use of 28 acre-feet per year at 115 gpm would require continual diversion for 1,320 hours (55 days) to achieve (page 3-16).

   In Chapter 4 the DEIS states that the proposed action would include appropriating a maximum of an additional 15 acre-feet of water from Butler Creek for snowmaking and 5 acre-feet for fire protection during the summer months (for a maximum appropriation of an additional 20 acre-feet, page 4-7). It is also stated that this increase in withdrawal of water from Butler Creek for snowmaking would be a maximum, and is unlikely to be entirely used except in very dry years. The DEIS states that the current maximum water withdrawal rate of 115 gpm from Butler Creek to fill the snowmaking reservoirs would not change, although the duration of water withdrawal would be extended for an additional 39 days.

   It is our understanding, therefore, that the total water withdrawal from Butler Creek will be increased from 28 to 48 acre-feet per year, with the 20 acre-feet of additional withdrawal needed for both snowmaking (15 acre-feet) and fire

protection (5 acre-feet), and this increase will be achieved by withdrawing water at the same rate of withdrawal that is currently used (115 gpm), but extending the period of withdrawal of water from Butler Creek from 55 maximum days per year to 94 days per year (increase of 39 days). The existing water right for 115 gpm diversion from Butler Creek is from October 15 to March 31 each year (page 4-8), and the period of water use is from November through March (page 4-31). An additional water storage reservoir would be built near the top of TV Mountain (page 4-8).

The DEIS states that at the existing MSB diversion Butler Creek flows vary from 80 gpm to 116 gpm during the mid-October to end of March period. If 115 gpm is withdrawn from Butler Creek it would appear that such diversion would likely dewater the creek. It is also stated that Butler Creek is estimated to produce a volume of 74 acre-feet during this mid October to end of March period (page 4-32), and the maximum MSB water right withdrawal of 48 acre-feet represents 64 percent of the total water available during this period (48 acre-feet/74 acre-feet = 64 percent), leaving 26 acre-feet available for downstream users (page 4-32). Existing water rights listed in the DNRC records for wintertime uses of both surface water and groundwater wells in the lower Butler Creek area total approximately 17 acre-feet from October to March. This leaves only 9 acre-feet available in Butler Creek stream for fish and aquatic life during this crucial over-wintering period (74 acre-feet – 48 acre-feet – 17 acre-feet = 9 acre-feet).

Table 3-11 (page 3-69) identifies Butler Creek flows on certain dates in 2008, but the only flows reported during the October to late March diversion period are 0.07 cfs (31 gpm) on October 30 and 0.04 cfs (18 gpm) on November 6 in section 1. Other flows are not reported for Butler Creek sections 2 and 3 during the October to March period, nor are flows reported for the other winter months of December, January, February and March. Also, the flows reported in this table do not seem consistent with the statement on page 4-32 that at the existing MSB diversion Butler Creek flows vary from 80 gpm to 116 gpm during the mid-October to end of March period. Although it is not clear to us exactly which section or sections of Butler Creek the existing and proposed MSB diversions occur on. We recommend that a map of Butler Creek showing the locations of sections 1, 2 and 3, and the location(s) of MSB water diversions be provided, and that locations of crucial over-wintering pools in relation to MSB diversions be identified.

The Table 3-11 Butler Creek flow reported for November 6 in section 1 of 0.04 cfs only provides 18 gpm, and the October 30 flow of 0.07 cfs barely provides 30 gpm. A flow of 30 gpm (0.067 cfs) in Butler Creek is stated to be the minimum flow needed for maintenance of Butler Creek fish habitat (pages 4-32, 4-34). A Butler Creek flow of at least 0.26 cfs is needed to obtain a 115 gpm MSB diversion, and neither flow reported in Table 3-11 during the mid-October to end of March period provided such flows.

We did not see any mitigation proposed for additional loss of crucial over-wintering fisheries habitat in Butler Creek. The DEIS only states that MSB would construct a flow monitoring station on Butler Creek to monitor flow rates during the winter season, and that the LNF will confirm that minimum of 30 gpm flows will be maintained in Butler Creek for fish habitat (pages 4-32, 4-33).

While we are pleased that Butler Creek flow monitoring is proposed, it is not clear to us how flows protective of aquatic life and crucial over-wintering habitat can be consistently provided when it appears that existing water withdrawals are resulting in adverse effects to Butler Creek aquatic life and over-wintering habitat, and additional water withdrawals over an additional 39 days during the winter are proposed that will result in loss of an additional 20 acre-feet of streamflow during the winter period. The DEIS states that extending MSB's water withdrawal to mid October would extend Butler Creek's low flow conditions, and this could potentially dewater riffle habitats in Section 1 as early as mid October, and could impact westslope cutthroat trout overwintering habitat (page 4-33).

It is stated that Butler Creek gains volume as it flows downstream, and that adverse effects of water withdrawals would diminish downstream, ending before downstream bull trout locations (page 4-33), although it is acknowledged that westslope cutthroat trout are present in the upstream reaches more affected by water diversions. The DEIS also states that at the local level (Butler Creek, La Valle Creek, and Grant Creek), extinction risks are "extreme" for bull trout and "high" for westslope cutthroat trout, and reasons given include water withdrawal in Butler Creek and local stream habitat conditions (page 3-72).

Population/habitat conditions for bull trout are already functioning at unacceptable risk for all indicators on Butler Creek (Table 3-12). We are concerned that increased diversion of water from Butler Creek during the October to March period for additional snowmaking will result in significant adverse effects to fish and aquatic life and their crucial over-wintering habitat, and increase the already extreme risks of extinction bull trout and high risks of westslope cutthroat trout extinction at the local level.

We recommend that the FEIS include additional discussion regarding how the LNF will be able to confirm that adequate Butler Creek flows can be maintained that are protective of aquatic life and crucial over-wintering habitat. In addition we recommend evaluation and discussion of the potential for pumping water from other water sources for snowmaking to avoid additional adverse effects to fish and aquatic life and over-wintering and riffle habitats in Butler Creek.

8. It is stated that approximately 8.1 acre-feet of the additional 15 acre-feet of water withdrawn from Butler Creek for snowmaking will be used in the expansion area in the La Valle Creek drainage (page 4-8), thus, increasing flows to La Valle Creek during spring runoff by 8.1 acre-feet and reducing runoff to Butler Creek by this amount. The DEIS states that both the La Valle and Butler Creek

drainages produce annual runoff of about 2,700 acre-feet, and the effect of this slight 8.1 acre-feet trans-basin water diversion is considered to be negligible.

We agree that a trans-basin diversion of 8.1 acre-feet in these drainages would likely have a negligible effect on stream channel characteristics (e.g., channel and bank stability), although given the apparent precarious state of Butler Creek fisheries habitat in light of dewatering concerns it is not clear that the effect of diversion of additional runoff waters from Butler Creek would have a negligible effect upon Butler Creek fisheries habitat and aquatic life. Although we realize spring runoff would likely occur after the crucial over-wintering period, we ask if the loss of this Butler Creek runoff would exacerbate Butler Creek dewatering effects upon aquatic life?

Climate Change

9. The DEIS does not discuss the potential effect of climate change on the proposed ski area expansion project. Most climate change models predict warmer winters and more of the region's precipitation coming in the form of rain than as snow, overall less snowpack, and more rapid melting of snowpack in the Rocky Mountain West. This has potential to affect existing and expanded snowmaking infrastructure at ski areas, including MSB, and possibly exacerbate stream dewatering concerns. We recommend that the FEIS discuss climate change and its potential effects on ski area operations, and analyze and disclose potential climate change adaptation or contingency measures, particularly in regard to snowmaking and effects on surface water diversions and maintaining adequate in-stream flows to support fisheries.

Indirect Effects

10. The DEIS stated that future residential housing development is a reasonably foreseeable action along Grant Creek road and lower Snowbowl Road, which would have a cumulative impact on traffic on Grant Creek Road (page 4-45). It was stated that this may contribute to the need for additional transportation infrastructure such as park-and-ride lots and mass transit. It is also stated that it is beyond the scope of this analysis to predict potential residential housing and related needs.

    We believe the indirect, growth inducing and land use changing effects that may be associated with the ski area expansion (and potential doubling of skier capacity) and their resultant environmental impacts, should be within the scope of the environmental impact analysis for the proposed MSB expansion in accordance with CEQ NEPA regulation 40 CFR 1508.8(b). Ski area expansions can promote and hasten additional growth and development to serve the increased numbers of skiers and service workers. Additional visiting skiers require transportation, improved road access, increased wastewater treatment, water supply, restaurants, hotels, service workers, and places for those service workers to live. Often the

indirect, growth inducing impacts of ski areas, and the infrastructure, growth and development sprouting nearby to serve the ski area causes greater environmental impacts/concerns than the direct impacts of the ski area expansion itself.

We recommend that the FEIS identify and discuss indirect effects or induced growth or development changes or at least make a good faith effort to explain the effects that are "reasonably foreseeable." How much developable private land lies within easy commuting distance of MSB? Are there environmentally sensitive areas such as riparian areas and wetlands or other important wildlife habitat within reasonable proximity to MSB that may be developed as an indirect response to MSB expansion and increased skier use? Will induced growth and land use change have an effect on air, water, and other natural systems and/or environmentally sensitive areas near the ski area?

We recognize that future land uses near the ski area may not be precisely known, but it may be possible to consider likely land uses and development trends in the area and estimate and disclose the likelihood that undeveloped land near the ski area will be developed as an indirect result of the ski area expansion. Also, the consistency of the proposed MSB expansion with Missoula County Land Use Plans should be disclosed.

11. We are pleased that continuous shuttle service accommodating 120 more skiers at one time (SAOT) would be provided on busy days to reduce traffic and parking needs. We understand that that proposed action does not include construction of a new parking lot, since additional roadside parking was already created along the widened Snowbowl Road below the base area, although some additional parking would be created after the existing maintenance building is moved, creating 30 new parking spots. We are also pleased that no new roads are proposed.

Wildlife

12. The DEIS states that approximately 654 acres of Lynx Critical Habitat lie within the proposed expansion area, and 1,058 acres are present in the existing SUP area. (page 3-42), although there are no documented occurrences of lynx on MSB and there is no evidence of denning or reproduction in the vicinity of the proposed expansion area. The DEIS also states that given the proximity of the proposed expansion area to known lynx distribution within the Rattlesnake LAU, lynx have the potential to occur within the proposed expansion area.(page 3-43).

    We are pleased that project guidelines to address requirements of the Northern Rockies Lynx Management Direction and Inland Native Fish Strategy (INFISH) are identified (page 2-14 to 2-15), and potential effects on the threatened Canada Lynx are evaluated and disclosed (4-15 to 4-20). We are concerned that the proposed project will result in the loss of 45 acres of suitable lynx habitat and 30 acres of mature multi-story habitat in the lynx analysis unit, although this is stated to be a small incremental loss. The biological assessment concludes that while the proposed project may affect the Canada lynx, it is unlikely to adversely affect

the threatened lynx.

13. Approximately 39 acres of the proposed 182 acres of tree cutting associated with new ski trail development, lifts and other project components would occur in old growth forest areas (page 4-11). The DEIS appears to discount this loss of old growth trees since it is stated that old growth forest in the Grant/O'Keefe Ecological Management Area comprises 1,452 acres, and loss of 39 acres of old growth would only reduce old growth forest from 8.6% to 8.4% of the area, which is still greater than the goal of maintaining 8% old growth forest in the area.

    While we are pleased that the amount of old growth forest in the Grant/O'Keefe Ecological Management Area will remain above the LNF goal of 8 percent, we remain concerned about the incremental loss of another 39 acres of old growth forest. Old growth stands are ecologically diverse and provide good breeding and feeding habitat for many bird and animal species, which have a preference or dependence on old growth (e.g., barred owl, great gray owl, pileated woodpecker). Much old growth habitat has already been lost, and we believe it is important to prevent continued loss of old growth habitat and to promote long-term sustainability of old growth stands, and restore where possible the geographic extent and connectivity of old growth.

    We also note that often lands outside the forest boundary have not been managed for the late-seral or old growth component, so National Forest lands may need to contribute more to the late-seral component to compensate for the loss of this component on other land ownerships within an ecoregion. There may also be potential indirect, growth inducing effects on old growth forest areas outside the MSB expansion area and off LNF lands that have not been considered.

Weeds

14. Weeds are a great threat to biodiversity and can often out-compete native plants and produce a monoculture that has little or no plant species diversity or benefit to wildlife. Noxious weeds tend to gain a foothold where there is soil disturbance, such as construction and grading activities. We are pleased that disturbed sites at MSB would be monitored for weed invasion and revegetation success, and weeds would be controlled (page 2-8, Appendix B). EPA supports integrated weed management (combined program of mechanical, biological, and chemical weed control), and we encourage use of weed control measures at the earliest stage of invasion to reduce impacts to native plant communities.

    While the DEIS states that no wetlands were identified in the proposed expansion area (page 3-20), and La Valle Creek is located west of the proposed SUP boundary, there may be construction and/or grading work that disturbs soils, and thus promotes weed spread, near aquatic areas near the parking lot and Snowbowl Road. We are pleased that the weed mitigation measures in Appendix B evidence an understanding of the potential adverse effects of herbicides on water quality and fisheries, and the need to take extra precaution to avoid herbicide transport to

streams and wetlands. In addition to the measures that reduce risk of herbicide contamination of aquatic areas in Appendix B, we recommend that use of more toxic herbicides (e.g., tordon) be avoided near aquatic areas, and that potentially toxic herbicides be applied at the lowest rate effective in meeting weed control objectives and according to guidelines for protecting public health and the environment.

U.S. Environmental Protection Agency Rating System for Draft Environmental Impact Statements

Definitions and Follow-Up Action*

Environmental Impact of the Action

LO - - Lack of Objections: The Environmental Protection Agency (EPA) review has not identified any potential environmental impacts requiring substantive changes to the proposal. The review may have disclosed opportunities for application of mitigation measures that could be accomplished with no more than minor changes to the proposal.

EC - - Environmental Concerns: The EPA review has identified environmental impacts that should be avoided in order to fully protect the environment. Corrective measures may require changes to the preferred alternative or application of mitigation measures that can reduce these impacts.

EO - - Environmental Objections: The EPA review has identified significant environmental impacts that should be avoided in order to provide adequate protection for the environment. Corrective measures may require substantial changes to the preferred alternative or consideration of some other project alternative (including the no-action alternative or a new alternative). EPA intends to work with the lead agency to reduce these impacts.

EU - - Environmentally Unsatisfactory: The EPA review has identified adverse environmental impacts that are of sufficient magnitude that they are unsatisfactory from the standpoint of public health or welfare or environmental quality. EPA intends to work with the lead agency to reduce these impacts. If the potential unsatisfactory impacts are not corrected at the final EIS stage, this proposal will be recommended for referral to the Council on Environmental Quality (CEQ).

Adequacy of the Impact Statement

Category 1 - - Adequate: EPA believes the draft EIS adequately sets forth the environmental impact(s) of the preferred alternative and those of the alternatives reasonably available to the project or action. No further analysis of data collection is necessary, but the reviewer may suggest the addition of clarifying language or information.

Category 2 - - Insufficient Information: The draft EIS does not contain sufficient information for EPA to fully assess environmental impacts that should be avoided in order to fully protect the environment, or the EPA reviewer has identified new reasonably available alternatives that are within the spectrum of alternatives analyzed in the draft EIS, which could reduce the environmental impacts of the action. The identified additional information, data, analyses or discussion should be included in the final EIS.

Category 3 - - Inadequate: EPA does not believe that the draft EIS adequately assesses potentially significant environmental impacts of the action, or the EPA reviewer has identified new, reasonably available alternatives that are outside of the spectrum of alternatives analyzed in the draft EIS, which should be analyzed in order to reduce the potentially significant environmental impacts. EPA believes that the identified additional information, data, analyses, or discussions are of such a magnitude that they should have full public review at a draft stage. EPA does not believe that the draft EIS is adequate for the purposes of the National Environmental Policy Act and or Section 309 review, and thus should be formally revised and made available for public comment in a supplemental or revised draft EIS. On the basis of the potential significant impacts involved, this proposal could be a candidate for referral to the CEQ.

* From EPA Manual 1640 Policy and Procedures for the Review of Federal Actions Impacting the Environment. February, 1987.